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HVAC system for ideal competitive conditions and enhanced comfort

Ice stadium, Pinerolo/Italy

At the Olympic Winter Games 2006 in Italy, Pinerolo's ice stadium was the site of the curling competition. To be well prepared for this event, the stadium's HVAC plant was equipped with an advanced control system from Siemens.

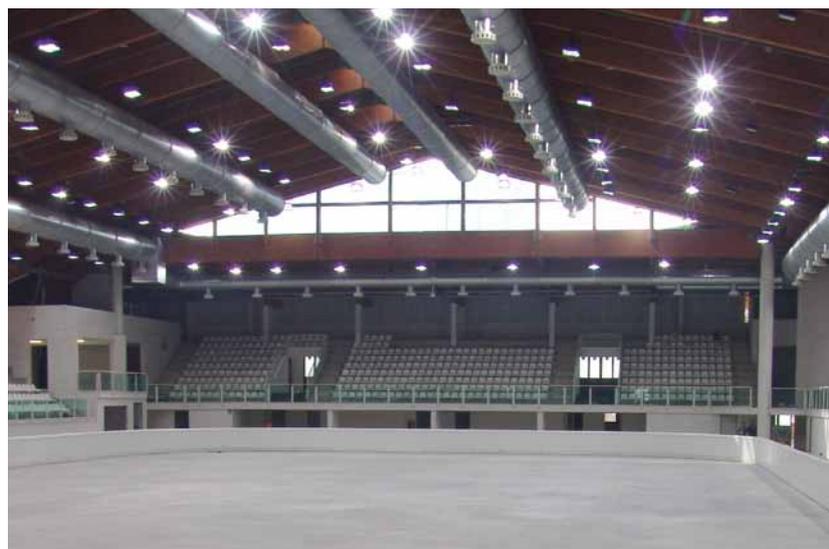
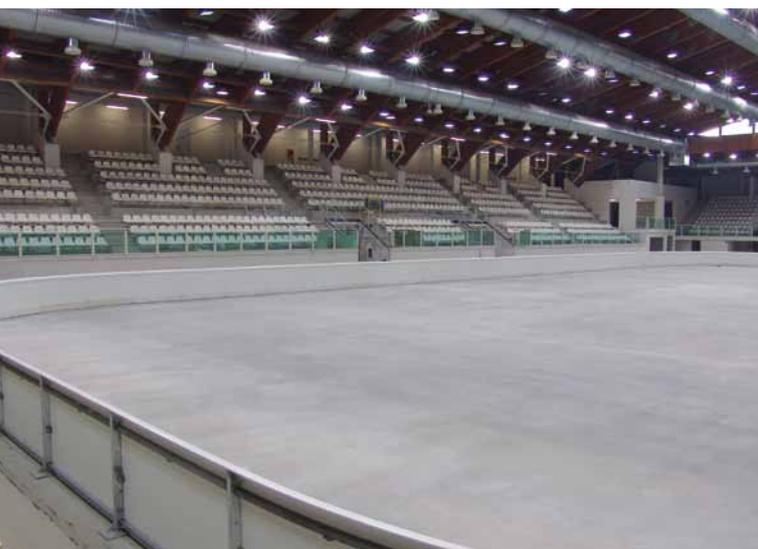
Although the capacity of Pinerolo's ice stadium is only 2,000 people, it has all the facilities required for Olympic sport events – from skating rink to changing rooms, from press conference room to VIP lounge including first-aid station and technical facilities. The building complex also accommodates the town's sport office.

Hence, the ice stadium had all the facilities required for spectators that would visit the Olympic Winter Games. Although curling in Italy is relatively unknown, a

large number of spectators were expected since 2006 was the first time an Italian curling team competed at Olympic Games.

Now, the only thing left was to technically upgrade the ice stadium in terms of comfort for both the participants and the spectators, whereby optimum competitive conditions played a decisive role. This meant that the HVAC system had to guarantee a perfect transition from a temperature of -5°C on the ice to comfortable climatic conditions for the spectators.

Answers for infrastructure.



Ice stadium, Pinerolo

To ensure a perfect transition from ideal competitive conditions on the ice to comfortable temperatures for the spectators, a reliable and accurately working HVAC control system was required.

Everything under control with Synco™

Now, control, operation, and monitoring of the HVAC system are fully ensured by the Synco 700 control system from Siemens. A total of four air conditioning systems are in use: Two for the ice rink and one for each of the two stands. In addition, five air handling units ensure the supply of primary air: Two in the changing rooms and three in the service area (office spaces, control room, etc.). Six Synco controllers were installed for control of the air handling units. They monitor the temperature on the ice and acquire individual, average, and alarm values. In addition, they calculate both internal and external enthalpy for the control of "free cooling" mode. The controllers also regulate the fan speeds, forward alarms, and control the direction of air flow over the ice rink.

Matching conditions

Certain measurements are made directly on the ice. Here, the temperature must be maintained at exactly -5°C , and absolute humidity must not exceed 2.5 g/kg to prevent white frost on the ice, which would adversely affect competitive conditions. Dehumidification is accomplished by rotating dehumidifiers, and is monitored by a Synco RMU universal controller. The temperature of the ice is acquired at several locations. Average values are used for the control functions, and individual values for remote monitoring.

Perfect interplay thanks to communication

The entire plant is controlled and monitored by 85 Synco controllers. They are interconnected via KNX communication and exchange information, but work autonomously. Operation takes place via user-friendly ACS software.

Versatile and straightforward

The customer opted for Synco since this is an extremely versatile and easy-to-operate system.

Highlights

- Accurate HVAC control
- Control system for all needs
- Perfect competitive conditions for sport events thanks to intelligent controllers
- KNX communication to automatically match all control processes
- User-friendly operating software